



6.28.

Residuals Management Technology, Inc.

1406 East Washington Avenue  
Suite 124  
Madison, Wisconsin 53703  
(608) 255-2134

December 6, 1983

Mr. Rolph Westman, President  
North Manchester Foundry  
P.O. Box 345  
North Manchester, IN 46962

Dear Mr. Westman:

This letter and enclosures address the following three items for North Manchester Foundry:

- . Laboratory results of recent waste testing and our analysis of these results.
- . A brief summary of waste disposal options.
- . A proposed workplan for meeting continuing technical, regulatory, and economic requirements.

#### WASTE TEST RESULTS AND ANALYSIS

The waste testing results for the EP Toxicity test are given on Enclosure A. These test results show that the individual waste samples and the composite are nonhazardous under state and federal hazardous waste regulations because concentrations of the metals in the samples tested are less than the USEPA's hazardous waste limits.

Disposal requirements for nonhazardous wastes are less stringent than those for hazardous waste. Also, because the EP Toxicity results are well below the hazardous waste limits, there may be potential for classification of your wastes as "excluded wastes". However, in recent conversations ISBH officials indicated that an "excluded waste" classification and an "excluded waste" landfill, does not appear to be a good long-term objective for North Manchester Foundry. This is because the excluded waste program appears to be an interim program at ISBH that could be changed at any time. In fact, state staff have already expressed some concern about the excluded site program. Also, it is our understanding that permits are not issued to "excluded waste" landfills, and without a permit, the long-term use of your landfill would always be in question.

An EP Water Test was also run on a composite of foundry waste samples collected. This composite was developed based on relative percentages of each waste type as estimated by foundry personnel. The results are given on Enclosure B. The extract was analyzed for Primary and Secondary Drinking

Mr. Rolph Westman  
December 6, 1983  
Page Two

Water Standards and a few additional parameters specific to foundry wastes in general. The results show that the composite has a very low potential to leach these constituents when distilled water is used as the extract. Primary and secondary parameter levels were all below the standards in the sample tested. These laboratory results also point to less stringent disposal requirements for your wastes and should be used to negotiate less stringent requirements for your landfill.

In summary, the initial test results suggest that your wastes have low pollution potential. However, a thorough Waste Characterization and Analysis should be completed for presentation to ISBH. This work is detailed later on in this package.

#### WASTE DISPOSAL OPTIONS

Regarding waste disposal options, there are two basic options:

OPTION 1 - ON-SITE DISPOSAL: In the past, North Manchester Foundry has disposed of wastes at the on-site landfill. This has been relatively convenient and inexpensive. It may be possible to continue to use the on-site landfill if the site is technically acceptable for your wastes and if state regulations can be met. The workplan (Enclosures C and D) addresses how to approach the technical and regulatory factors as well as evaluate the long-term economics of continued on-site disposal versus disposal somewhere else.

OPTION 2 - OFF-SITE DISPOSAL: If the landfill cannot be used, for either technical or regulatory reasons, off-site disposal is another option to consider. The off-site disposal option has two parts:

- A. New foundry landfill
- B. Existing landfill (private or municipal)

RMT has not yet evaluated the availability of land for new landfills or the existence of other landfills within a reasonable haul distance of the North Manchester Foundry. However, should the on-site landfill be unacceptable for any reason, it is likely that off-site disposal could be secured. The economics may or may not be acceptable, depending on the following cost variables:

New Foundry Landfill Cost Variables : Waste hauling, land purchase costs, engineering, construction, operating, closure and long-term care.

Existing Landfill Cost Variables: Waste hauling, tipping fees (would include last five items above)

## HAZARDOUS WASTE WORK SHEET

G-2B

GENERATOR

Norm Manchester Landry

ADDRESS

TELEPHONE

219/982-2191

PERSON(S) CONTACTED

Mr. Westman

Waste Description (process, treatment, dewatering device, chemical characteristics, physical characteristics, i.e., percent solids)

1-5-84 Contacted Mr. Westman - will send him  
boundary outline & exclusion site application  
from (mailed 1-5-84) Explained most EP TOX  
tests only \$500 & that RMT's fee looked out of  
line. Told him cyanide & nickel & COO not tested  
but would not require their testing at this point.  
to send in soils & Topo map with old & proposed  
areas outlined.

R. H. Hackett

## ENCLOSURE B

C-2A

NORTH MANCHESTER FOUNDRY WASTE  
EP WATER TEST RESULTS ON COMPOSITE OF PLANT WASTE

Parameter	RESULTS
Alkalinity, Total at pH 4.5 (mg/l as $\text{CaCO}_3$ )	24
Ammonia Nitrogen (mg/l as N)	4.29
Arsenic (mg/l)	0.002
Barium (mg/l)	< 0.2
Cadmium (mg/l)	< 0.01
Chloride (mg/l)	5.3
COD (mg/l)	4.0
Copper (mg/l)	< 0.02
Chromium, Total (mg/l)	< 0.05
Fluoride (mg/l)	0.92
Hardness, Total (mg/l)	8.0
Iron (mg/l)	< 0.03
Lead (mg/l)	< 0.005
Manganese (mg/l)	< 0.01
Mercury (mg/l)	< 0.0002
Nickel (mg/l)	< 0.04
Nitrate Nitrogen (mg/l as N)	0.94
Phenols (mg/l)	0.55
Total Dissolved Solids (mg/l)	174
Selenium(mg/l)	< 0.001
Silver (mg/l)	< 0.02
Sulfate (mg/l)	53.4
Zinc (mg/l)	0.01
pH (pH Units)	9.9



of the soil. Existing vegetation should be disturbed as little as possible during construction, and disturbed areas should be revegetated as soon as possible to reduce erosion. This soil is moderately limited for local roads and streets because of low strength and frost action. Providing drainage along roads helps prevent damage by frost action. The base material needs to be replaced or strengthened with more suitable material to support vehicular traffic. This soil readily absorbs the effluent from a septic tank absorption field, but it does not adequately filter the effluent. Consequently, the ground water can become contaminated.

This soil is in capability subclass IIe and in woodland suitability subclass 2o.

**KsA—Kosciusko sandy loam, 0 to 2 percent slopes.** This is a nearly level, deep, well drained soil on river terraces and outwash plains. The areas are elongated and range from 3 to 30 acres in size.

Typically, the surface layer is brown sandy loam about 9 inches thick. The subsoil is about 24 inches thick. The upper part is brown, friable sandy clay loam and gravelly sandy clay loam. The lower part is dark brown and yellowish brown, very friable gravelly sandy loam and loamy sand. The underlying material to a depth of 60 inches is yellowish brown gravelly sand. In places this soil is more than 40 inches thick. In some places the surface layer is darker than is typical of Kosciusko soils. In some places the surface layer is loamy fine sand. In places the slope is more than 2 percent.

Included with this soil in mapping are small areas of soils that have a gravelly surface layer and a few small areas of soils on short steep slopes. Also included are small areas of well drained Ormas soils, which have more sand than the Kosciusko soil, on ridges, somewhat poorly drained Homer soils and very poorly drained Sebewa soils in slight depressions, and excessively drained Rodman soils on steep breaks. The included soils make up 5 to 15 percent of the map unit.

The available water capacity of this soil is low. Permeability is moderate in the surface layer and subsoil and very rapid in the underlying material. Surface runoff is slow. The surface layer has a moderate content of organic matter, and it is friable. Tilth is good.

This soil is used mainly for cultivated crops. In a few areas it is used for hay, pasture, or woodland. It is a probable source of sand and gravel.

This soil is suited to corn, soybeans, and small grains. Drought is a moderate hazard in extended dry periods. This soil has a few stones on or near the surface that can hinder farming operations. Conservation tillage that leaves a protective amount of crop residue on the surface and cover crops help reduce evaporation and crusting and increase the infiltration of water.

This soil is suited to grasses and legumes for hay or pasture. Species that withstand drought should be planted. Pasture rotation, timely deferment of grazing,

and restricted use during dry periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Species that withstand drought should be favored. Plant competition is the main concern in management. Seedlings survive and grow well if competing vegetation is controlled. Unwanted trees and shrubs can be controlled or removed by cutting, girdling, or spraying.

This soil is moderately limited for buildings without basements because of the shrink-swell potential. It is well suited to buildings with basements. Foundations and footings should be designed and constructed to help prevent structural damage caused by the shrinking and swelling of the soil. This soil is moderately limited for local roads and streets because of the shrink-swell potential and frost action. The layers of the soil that have a moderate shrink-swell potential should be replaced with suitable soil material. Providing drainage along roads helps prevent damage by frost action. This soil readily absorbs the effluent from a septic tank absorption field, but it does not adequately filter the effluent. Consequently, the ground water can become contaminated.

This soil is in capability subclass IIIs and in woodland suitability subclass 2s.

**KsB—Kosciusko sandy loam, 2 to 6 percent slopes.** This is a gently sloping, deep, well drained soil on river terraces and outwash plains. The areas are irregular in shape and range from 3 to 25 acres in size.

Typically, the surface layer is brown sandy loam about 9 inches thick. The subsoil is about 29 inches thick. The upper part is brown, firm sandy clay loam and gravelly sandy clay loam. The lower part is dark yellowish brown and dark brown, friable and very friable gravelly sandy loam. The underlying material to a depth of 60 inches is yellowish brown gravelly sand. In places this soil is more than 40 inches thick. In some places the surface layer is darker than is typical, and in some places it is loamy fine sand. In places there are small areas where the slope is less than 2 percent or more than 6 percent.

Included with this soil in mapping are small areas of soils that have a gravelly surface layer and a few areas of soils on short steep slopes. Also included are small areas of well drained Ormas soils, which have more sand than the Kosciusko soil, on ridges, somewhat poorly drained Homer soils in narrow drainageways, and excessively drained Rodman soils on steep breaks. The included soils make up 2 to 15 percent of the map unit.

The available water capacity of this soil is low. Permeability is moderate in the surface layer and subsoil and very rapid in the underlying material. Surface runoff is medium. The surface layer has a moderate content of organic matter, and it is friable. Tilth is good.

This soil is used mainly for cultivated crops. In some areas it is used for hay or pasture. A few areas have

been left wooded. This soil is a probable source of sand and gravel.

This soil is suited to corn, soybeans, and small grains. Drought is a moderate hazard in extended dry periods. This soil has a few stones on or near the surface that can hinder farming operations. Crop rotation, diversions, contour farming, grassed waterways, grade stabilization structures, or other conservation practices help to reduce erosion and runoff if cultivated crops are grown. Conservation tillage that leaves a protective amount of crop residue on the surface and cover crops help control erosion, reduce crusting and evaporation, and increase the infiltration of water.

This soil is suited to grasses and legumes for hay or pasture. Species that withstand drought should be planted. Pasture rotation, timely deferment of grazing, and restricted use in dry periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Species that withstand drought should be favored. Plant competition is the main concern in management. Seedlings survive and grow well if competing vegetation is controlled. Unwanted trees and shrubs can be controlled or removed by cutting, girdling, or spraying.

This soil is moderately limited for buildings without basements because of the moderate shrink-swell potential. It is well suited to buildings with basements. Foundations and footings should be designed and constructed to help prevent structural damage caused by the shrinking and swelling of the soil. Existing vegetation should be disturbed as little as possible during construction, and disturbed areas should be revegetated as soon as possible to reduce erosion. This soil is moderately limited for local roads and streets because of the shrink-swell potential and frost action. The layers of soil that have a moderate shrink-swell potential need to be replaced with suitable soil material. Providing side ditches and culverts for drainage helps prevent damage to roads by frost action. This soil readily absorbs the effluent from septic tank absorption fields, but it does not adequately filter the effluent. Consequently, the ground water may become contaminated.

This soil is in capability subclass IIIe and in woodland suitability subclass 2s.

**KsC—Kosciusko sandy loam, 6 to 12 percent slopes.** This is a moderately sloping, deep, well drained soil on river terraces and outwash plains. The areas are irregular in shape and range from 3 to 8 acres in size.

Typically, the surface layer is brown sandy loam about 8 inches thick. The subsoil is about 21 inches thick. It is brown, firm gravelly sandy clay loam and gravelly sandy loam in the upper part and dark yellowish brown, friable gravelly sandy loam and loamy sand in the lower part. The underlying material to a depth of 60 inches is pale brown sand and gravelly sand. In places this soil is more than 40 inches thick. In some places the surface layer is

darker than is typical, and in a few places it is loamy fine sand. In places the slope is less than 6 percent or more than 12 percent.

Included with this soil in mapping are small areas of soils that have slopes of more than 18 percent and small areas of soils that have a gravelly surface layer. Also included are small areas of well drained Ormas soils, which have more sand than the Kosciusko soil, on ridges and excessively drained Rodman soils on steep breaks. The included soils make up 2 to 10 percent of the map unit.

The available water capacity of this soil is low. Permeability is moderate in the surface layer and subsoil and very rapid in the underlying material. Surface runoff is medium. The surface layer has a moderate content of organic matter, and it is friable. Tilth is good.

This soil is used mainly for cultivated crops. In some areas it is used for hay or pasture. A few areas have been left wooded. This soil is a probable source of sand and gravel.

This soil is suited to corn, soybeans, and small grains. Drought is a hazard in extended dry periods. This soil has a few stones on or near the surface that can hinder farming operations. Crop rotation, diversions, contour farming, grassed waterways, grade stabilization structures, or other conservation practices help reduce soil loss and surface runoff. Conservation tillage that leaves a protective amount of crop residue on the surface and cover crops help control erosion, reduce crusting and evaporation, and increase the infiltration of water.

This soil is suited to grasses and legumes for hay or pasture. Species that withstand drought should be planted. Pasture rotation, timely deferment of grazing, and restricted use in dry periods help to keep the pasture and soil in good condition.

This soil is well suited to trees. Species that withstand drought should be favored. Plant competition is the main concern in management. Seedlings survive and grow well if competing vegetation is controlled. Unwanted trees and shrubs can be controlled or removed by cutting, girdling, or spraying.

This soil is moderately limited for use as building sites because of the slope and the moderate shrink-swell potential. Buildings can be designed to conform to the slope. Foundations and footings should be designed and constructed to help prevent structural damage caused by the shrinking and swelling of the soil. Existing vegetation should be disturbed as little as possible during construction, and disturbed areas should be revegetated as soon as possible to reduce erosion. This soil is moderately limited for local roads and streets because of the shrink-swell potential, frost action, and slope. The layers that have a moderate shrink-swell potential should be replaced with suitable soil material. Providing side ditches and culverts for drainage helps prevent damage caused by frost action. Local roads and streets should

**So—Sloan silty clay loam, frequently flooded.** This is a nearly level, deep, very poorly drained soil on bottom lands. The areas are long and narrow and range from 3 to 80 acres in size.

Typically, the surface layer is very dark grayish brown silty clay loam about 8 inches thick. The subsurface layer is very dark grayish brown silty clay loam about 8 inches thick. The subsoil is dark grayish brown and dark gray, mottled, firm silty clay loam and loam about 16 inches thick. The underlying material to a depth of 60 inches is very dark gray, mottled, stratified loam, sandy loam, and loamy sand. In some small creek bottoms, this soil is underlain by sand and gravelly sand within a depth of 30 inches. In some areas on bottom lands of the Wabash River and its small tributaries, limestone bedrock is within a depth of 40 inches.

Included with this soil in mapping are areas of soils that are wet most of the year. Also included are small areas of well drained Genesee soils and somewhat poorly drained Shoals soils in higher positions near the stream channel. The included soils make up 2 to 8 percent of the map unit.

The available water capacity of this soil is high. Permeability is moderately slow. The water table is at or near the surface. Surface runoff is slow. The surface layer has a high content of organic matter, and it is friable. Tilth is fair.

On the larger bottom lands, this soil is used mainly for cultivated crops. On the small, narrow bottom lands, it is used as pasture or left as woodland.

This soil is suited to corn, soybeans, and small grains if it is protected from flooding and is adequately drained. In most years planting may be delayed or replanting may be necessary because of spring flooding. Levees can be used to protect this soil from flooding. Shallow surface drains and subsurface drains can be used to remove excess water if outlets are available. Adequate outlets are difficult to find in some areas. In some places, if subsurface drains are installed below a depth of 3 feet, fine sand can flow into the drains and plug them. Conservation tillage that leaves a protective amount of crop residue on the surface and cover crops reduce crusting, improve soil tilth, and increase the infiltration of water.

This soil is well suited to grasses for hay or pasture if it is protected from flooding and adequately drained. Deep-rooted legumes grow poorly in unprotected areas of this soil because they cannot tolerate flooding and a high water table. Branches and other debris left on fields by floodwater can hinder the harvest of hay. Overgrazing or grazing when the soil is wet causes surface compaction and poor tilth.

This soil is suited to trees. Plant competition, seedling mortality, a windthrow hazard, and equipment limitations are concerns in management. Species that tolerate wetness should be favored. Unwanted trees and shrubs can be controlled or removed by cutting, girdling, or

spraying. Replanting is often necessary to establish a good stand. Care in thinning or no thinning at all can help prevent windthrow. In harvesting, trees should not be left standing alone or widely spaced. Trees generally are harvested in dry weather or when the ground is frozen.

This soil generally is not suitable for use as building sites and for sanitary facilities because of flooding. It is severely limited for local roads because of flooding and low strength. Constructing roads on raised and well compacted fill material and providing side ditches and culverts for drainage help to prevent the damage caused by flooding and low strength.

This soil is in capability subclass IIIw and in woodland suitability subclass 2w.

**Wc—Walkkill silt loam.** This is a nearly level, deep, very poorly drained soil in deep depressions on uplands, outwash plains, and river terraces. It is often ponded by runoff from adjacent higher areas. The areas of this map unit are oval or irregular in shape and range from 3 to 10 acres in size.

Typically, the surface layer is very dark grayish brown silt loam about 9 inches thick. The underlying material is dark grayish brown silt loam about 16 inches thick. Below that, to a depth of 60 inches, there is a buried organic soil that is black and very dark brown muck. In places the overburden of mineral soil is less than 16 inches thick. In places this soil is underlain by sedimentary peat or sandy and gravelly material.

Included with this soil in mapping are areas of undrained soils that are wet most of the year. Also included are small areas of well drained Fox, Kosciusko, Miami, and Morley soils on the slopes that surround the depressions. The included soils make up 4 to 12 percent of the map unit.

The available water capacity of this soil is high. Permeability is moderate in the mineral material and moderately slow to moderately rapid in the organic material. The water table is often at or above the surface in winter and spring. Surface runoff is very slow or is ponded. The surface layer has a high content of organic matter, and it is friable. Tilth is good.

In most places this soil has been drained at one time and has been allowed to revert to marsh. In adequately drained areas this soil is used for cultivated crops. The areas that have been partly but inadequately drained are used mainly as pasture.

This soil is suited to corn, soybeans, and small grains if it is adequately drained. Wetness is a major limitation, and ponding is the major hazard. Most crops grow poorly in the undrained areas. This soil generally is difficult to drain. Many areas do not have an adequate drainage outlet. Clay and concrete tile drains installed in the organic material settle and fall out of alignment. The poor stability of the organic material causes ditchbanks to slough and block the ditch. Conservation tillage that

TABLE 12.—BUILDING SITE DEVELOPMENT--Continued

[illegible]

TABLE 14.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
KsA, KsB, KsC Kosciusko	Good	Probable	Probable	Poor: small stones, area reclaim.
MbA, MbB Martinsville	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
MbC2 Martinsville	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
Md Martinsco	Poor: wetness, low strength.	Probable	Improbable: excess fines.	Poor: excess humus, wetness.
MeB Metea	Poor: thin layer.	Improbable: thin layer.	Improbable: too sandy.	Fair: too sandy.
MeC Metea	Poor: thin layer.	Improbable: thin layer.	Improbable: too sandy.	Fair: too sandy, slope.
MfB2 Miami	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
MfC2 Miami	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
MfD2, MfE2 Miami	Fair: slope, low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
MhB2 Miami	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim.
MhC2, MhC3 Miami	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, slope.
MkD2 Miami	Fair: slope, low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
MlC3 Miami	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
Mm Milford	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Mp Millsdale	Poor: low strength, area reclaim, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, thin layer.
MsA, MsB2, MsC2 Milton	Poor: area reclaim, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
MtG Milton Variant	Poor: area reclaim, large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, slope.

TABLE 15.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Fond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
KsA, KsE-- Kosciusko	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Too sandy--	Droughty.
KsC-- Kosciusko	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, too sandy.	Slope, droughty.
MbA-- Martinsville	Moderate: seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MbE-- Martinsville	Moderate: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MbC2-- Martinsville	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
Md-- Martisco	Severe: seepage.	Severe: ponding.	Severe: cutbanks cave.	Ponding, percs slowly, subsides.	Ponding, soil blowing, percs slowly.	Wetness, percs slowly.
MetA-- Metea	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Too sandy, soil blowing.	Droughty.
MeC-- Metea	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, too sandy, soil blowing.	Slope, droughty.
MfB2-- Miami	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MfC2, MfD2, MfE2-- Miami	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
MhB2-- Miami	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
MhC2, MhC3, MhD3, MhE3-- Miami	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
MfD-- Miford	Slight	Severe: ponding.	Severe: slow refill.	Ponding, frost action.	Erodes easily, ponding.	Wetness, erodes easily.
Mp-- Millsdale	Moderate: depth to rock.	Severe: ponding.	Severe: no water.	Depth to rock, frost action, ponding.	Depth to rock, ponding.	Wetness, depth to rock.
MsA-- Milton	Moderate: seepage, depth to rock.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, erodes easily.	Erodes easily, depth to rock.
MsE2-- Milton	Moderate: seepage, depth to rock, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, erodes easily.	Erodes easily, depth to rock.
MsC2-- Milton	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
MtG-- Milton Variant	Severe: slope.	Severe: piping, large stones.	Severe: no water.	Deep to water	Slope, large stones, depth to rock.	Large stones, slope, droughty.
MvC2, MvD2, MvE2, MvD3-- Morley	Severe: slope.	Slight	Severe: no water.	Deep to water	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.

TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth in	USDA texture	Classification		Frag- ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
GnE2----- Glynwood	0-8	Silt loam-----	CL-ML, CL	A-4, A-6	0	95-100	90-100	80-100	55-90	23-40	4-15
	8-26	Clay loam, silty clay loam, clay.	CL, CH	A-7, A-6	0-5	95-100	85-100	75-100	65-95	35-55	15-30
	26-60	Clay loam, silty clay loam.	CL	A-6, A-4	0-5	95-100	80-100	75-95	65-90	25-40	7-18
GoC3----- Glynwood	0-7	Clay loam-----	CL	A-6, A-7	0-2	95-100	85-100	75-100	60-95	25-45	10-22
	7-23	Clay, clay loam, silty clay loam.	CL, CH	A-7, A-6	0-5	95-100	85-100	75-100	65-95	35-55	15-30
	23-60	Clay loam, silty clay loam.	CL	A-6, A-4	0-5	95-100	80-100	75-95	65-90	25-40	7-18
HaA----- Haskins	0-12	Loam-----	CL-ML, CL	A-4, A-6	0	95-100	85-100	70-100	55-90	25-40	5-20
	12-25	Clay loam, loam, gravelly sandy clay loam.	SC, CL	A-6, A-4, A-2	0	85-100	70-100	55-85	30-65	20-40	7-20
	25-60	Clay, silty clay, clay loam.	CH, CL	A-7, A-6	0	100	85-100	80-100	70-95	35-65	15-40
HeG----- Hennepin	0-3	Loam-----	CL, CL-ML	A-4, A-6	0-5	90-100	85-100	70-100	60-95	25-40	5-20
	3-13	Loam, sandy loam, clay loam.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7	0-5	85-100	80-100	65-100	35-95	20-50	5-25
	13-60	Loam, sandy loam, clay loam.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7	0-5	85-100	80-100	65-100	35-95	20-50	5-25
Ho----- Homer	0-11	Loam-----	CL, CL-ML	A-4, A-6	0	95-100	90-100	85-100	70-95	25-35	5-15
	11-15	Silty clay loam, clay loam, loam.	CL	A-6, A-7	0	90-100	90-100	90-100	70-95	30-50	15-30
	15-35	Gravelly sandy clay loam, sandy clay loam, sandy loam.	SC	A-2-6, A-6	0-3	90-100	85-100	75-90	30-50	25-35	10-15
	35-60	Stratified loamy sand to very gravelly sand.	SP, GP, SP-SM, GP-GM	A-1	1-5	30-70	22-55	7-20	2-10	—	NP
Ht, Hx----- Houghton.	0-60	Sapric material	Pt	A-8	0	—	—	—	—	—	—
KaA, KaB----- Kalamazoo	0-12	Sandy loam-----	SM, SM-SC	A-2-4	0-5	95-100	80-100	60-70	15-35	<20	NP-7
	12-30	Clay loam, sandy clay loam, gravelly sandy loam.	SC, CL	A-4, A-6	0-5	95-100	70-95	65-95	35-80	20-38	9-20
	30-49	Loamy coarse sand, loamy sand, gravelly sandy loam.	SM, SP-SM	A-2-4, A-1-b	0-5	95-100	60-95	40-60	10-25	—	NP
	49-60	Sand, gravelly sand.	SP, SP-SM	A-1, A-3, A-2	0-5	60-80	25-75	10-55	0-10	—	NP
KaA, KaB, KaC----- Kosciusko	0-9	Sandy loam-----	SM, SM-SC, ML, CL-ML	A-4, A-2-4	0	85-100	80-100	50-90	30-70	<25	NP-6
	9-19	Sandy clay loam, gravelly sandy loam.	SM-SC, SC, GC, GM-GC	A-4, A-6, A-2, A-1	0-3	55-80	55-75	35-65	15-40	20-40	5-20
	19-38	Gravelly loamy sand, very gravelly sandy loam, gravelly sandy loam.	SM, GM, GP-GM, SP-SM	A-1, A-2-4	0-5	45-75	40-70	20-50	10-30	<20	NP
	38-60	Gravelly coarse sand.	SP, SP-SM, GP, GP-GM	A-1	1-8	30-60	30-55	15-40	2-10	<20	NP

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm <sup>3</sup>	In/hr	In/in	pH					Pct
Ho----- Homer	0-11	10-17	1.35-1.55	0.6-2.0	0.20-0.24	5.1-7.3	Low-----	0.37	4	5	1-3
	11-15	20-35	1.45-1.65	0.6-2.0	0.17-0.19	5.1-6.0	Moderate-----	0.37			
	15-35	17-27	1.45-1.65	0.6-2.0	0.15-0.17	5.1-6.0	Low-----	0.37			
	35-60	2-8	1.50-1.70	6.0-20	0.02-0.04	7.9-8.4	Low-----	0.10			
Ht, Hx----- Houghton	0-60	---	0.15-0.45	0.2-6.0	0.35-0.45	5.6-7.8	-----	---	---	3	>70
KaA, KaB----- Kalamazoo	0-12	8-20	1.10-1.65	2.0-6.0	0.10-0.15	5.1-7.3	Low-----	0.24	4	3	1-3
	12-30	18-35	1.25-1.70	0.6-2.0	0.10-0.18	5.1-7.3	Moderate-----	0.32			
	30-49	2-15	1.50-1.65	6.0-20	0.02-0.08	5.1-7.8	Low-----	0.10			
	49-60	0-10	1.50-1.65	6.0-20	0.01-0.03	7.4-8.4	Low-----	0.10			
KsA, KsB, KsC----- Kosciusko	0-9	7-17	1.30-1.45	0.6-2.0	0.13-0.20	5.1-7.3	Low-----	0.28	4	3	.5-2
	9-19	18-27	1.40-1.60	0.6-2.0	0.07-0.14	5.1-7.3	Moderate-----	0.28			
	19-38	4-12	1.50-1.70	0.6-2.0	0.05-0.11	5.6-7.8	Low-----	0.28			
	38-60	1-5	1.70-1.90	>20	0.02-0.04	7.4-8.4	Low-----	0.10			
MbA, MbB, MbC2----- Martinsville	0-12	8-17	1.30-1.45	0.6-2.0	0.20-0.24	5.6-7.3	Low-----	0.37	5	5	1-3
	12-29	18-30	1.40-1.60	0.6-2.0	0.17-0.20	5.1-6.5	Moderate-----	0.37			
	29-53	10-25	1.40-1.60	0.6-2.0	0.12-0.14	5.6-7.3	Low-----	0.24			
	53-60	3-23	1.50-1.70	0.6-2.0	0.19-0.21	7.4-8.4	Low-----	0.24			
Md----- Martinsco	0-13	---	0.30-0.55	0.6-6.0	0.35-0.45	6.1-8.4	-----	---	---	3	30-75
	13-56	---	---	0.06-0.2	---	7.4-8.4	Low-----	---	---		
	56-60	2-8	1.60-1.80	2.0-6.0	0.05-0.10	7.4-8.4	Low-----	---	---		
MeB, MeC----- Metea	0-10	3-8	1.45-1.60	6.0-20	0.10-0.12	5.6-7.3	Low-----	0.17	5	2	.5-2
	10-25	2-19	1.50-1.70	6.0-20	0.06-0.11	5.1-7.3	Low-----	0.17			
	25-49	25-35	1.50-1.70	0.6-2.0	0.15-0.19	5.6-7.8	Moderate-----	0.32			
	49-60	20-30	1.40-1.65	0.6-2.0	0.05-0.19	7.4-8.4	Low-----	0.32			
MfB2, MfC2----- Miami	0-8	20-27	1.30-1.45	0.6-2.0	0.19-0.21	5.6-7.3	Moderate-----	0.37	5	5	1-3
	8-32	27-35	1.45-1.60	0.6-2.0	0.15-0.19	5.6-7.8	Moderate-----	0.37			
	32-60	15-26	1.45-1.60	0.6-2.0	0.17-0.19	7.4-8.4	Low-----	0.37			
MfD2, MfE2----- Miami	0-8	11-22	1.30-1.45	0.6-2.0	0.20-0.24	5.6-7.3	Low-----	0.37	5	5	1-3
	8-32	25-35	1.45-1.65	0.6-2.0	0.15-0.20	5.6-7.0	Moderate-----	0.37			
	32-60	15-30	1.55-1.90	0.2-0.6	0.05-0.19	6.6-8.4	Moderate-----	0.37			
MhB2, MhC2----- Miami	0-6	11-22	1.30-1.45	0.6-2.0	0.20-0.24	5.6-7.3	Low-----	0.37	5	5	1-3
	6-33	25-35	1.45-1.65	0.6-2.0	0.15-0.20	5.6-6.0	Moderate-----	0.37			
	33-60	15-30	1.55-1.90	0.2-0.6	0.05-0.19	6.6-8.4	Moderate-----	0.37			
MkC3, MkD3----- Miami	0-9	27-35	1.35-1.60	0.6-2.0	0.18-0.20	5.6-7.3	Moderate-----	0.37	4	6	.5-2
	9-25	25-35	1.45-1.65	0.6-2.0	0.15-0.20	5.6-6.0	Moderate-----	0.37			
	25-60	15-30	1.55-1.90	0.2-0.6	0.05-0.19	6.6-8.4	Moderate-----	0.37			
MlC3----- Miami	0-9	27-35	1.35-1.50	0.6-2.0	0.17-0.19	5.6-7.3	Moderate-----	0.37	5	6	.5-2
	9-26	27-35	1.45-1.60	0.6-2.0	0.15-0.19	5.6-7.8	Moderate-----	0.37			
	26-60	15-26	1.45-1.60	0.6-2.0	0.17-0.19	7.4-8.4	Low-----	0.37			
Mm----- Milford	0-15	35-42	1.30-1.50	0.6-2.0	0.12-0.23	5.6-7.3	High-----	0.28	5	4	5-6
	15-37	35-42	1.40-1.60	0.2-0.6	0.18-0.20	5.6-7.8	Moderate-----	0.43			
	37-60	20-30	1.50-1.70	0.2-0.6	0.20-0.22	6.6-8.4	Moderate-----	0.43			
Mp----- Milldale	0-13	27-32	1.30-1.50	0.6-2.0	0.19-0.22	6.1-7.3	Moderate-----	0.32	4	6	4-7
	13-36	35-45	1.40-1.70	0.2-0.6	0.12-0.16	6.1-8.4	High-----	0.32			
	36	---	---	---	---	---	---	---			
MsA, MsB2, MsC2----- Milton	0-7	14-27	1.30-1.50	0.6-2.0	0.18-0.23	5.1-7.3	Low-----	0.37	4	6	1-3
	7-33	35-50	1.45-1.70	0.2-0.6	0.12-0.18	4.5-7.8	Moderate-----	0.37			
	33-38	25-45	1.40-1.70	0.2-2.0	0.12-0.16	6.1-7.8	Moderate-----	0.37			
	38	---	---	---	---	---	---	---			

**NORTH  
MANCHESTER  
FOUNDRY, INC.**

P. O. BOX 345  
NORTH MANCHESTER  
INDIANA 46962  
AREA 219 982-2199



G-2B

January 11, 1984  
BY STATE OF INDIANA  
STATE BOARD OF HEALTH

Mr. Roy Harbert  
Special Project Section  
Land Pollution Control Division  
Indiana State Board of Health  
1330 W. Michigan Street  
Indianapolis, Indiana 46206

SUBJECT: REQUEST FOR DISPOSAL OF FOUNDRY REFUSE

Dear Mr. Harbert:

In accordance with information supplied by your department we request disposal for our Foundry wastes. This is a high volume non-hazardous material composed of the following approximate percentages.

Ladle & Furnace lining	2%
Core butts and core refuse	2%
Floor dirt	40%
Dust collector discharge	52%
Slag	4%

Disposal site is on property owned by North Manchester Foundry adjacent to the foundry operation. Application for exclusion of this site is also submitted at this time.

Samples of individual constituents and composite samples have been tested by Residuals Management Technology, Inc. Grand Ledge, Michigan consultants. These tests included standard EP toxicity tests and separate EP toxicity test with no ph adjustment on acid added. Copies of these tests are attached. Enclosure A lists component test results and Enclosure B lists composite test results.

Sincerely,  
NORTH MANCHESTER FOUNDRY, INC.

*Walt Linn*  
Walt Linn  
Plant Engineer

*R. Westman*  
R. Westman  
Manager

WL:lu  
enclosures

6-22

C E R T I F I C A T E O F S U R V E Y

I, Herbert A. Underwood, hereby certify that I am a Registered Land Surveyor, licensed in compliance with laws of the State of Indiana; that the following description and accompanying plat correctly represent a survey completed to the best of my knowledge and belief.

**LEGAL DESCRIPTION:** A tract of land in the fractional northeast quarter of Section 6, T29N, R73E, Wabash County, Indiana in the Town of North Manchester.

More particularly described as follows:

Beginning at a point South  $2^{\circ}-48'$  East a distance of 151.1 feet from the southwest corner of lot #9 in Reeters Addition to North Manchester; thence S  $80^{\circ}-50'$  E. 1181.0 feet to the west right of way of the Wabash Road; thence S  $9^{\circ}-35'$  West 187.22 feet along said right of way to the right of way of the Railroad; thence S.  $44^{\circ}-28'$  W 801 feet along the railroad right of way to the north bank of Eel River; thence along said bank following the meandering to a point which is N  $40^{\circ}-15'$  E 864 feet of the intersection of the north bank of Eel River and the west right of way of the railroad; thence N.  $2^{\circ}-48'$  W 292.1 feet to the point of beginning. Containing therein 14.18 acres more or less. Subject to easement of record for town sanitary sewer.

Surveyed for:  
North Manchester Foundry  
Div. of H.E. Detrick Co.  
North Manchester, Ind.  
Aug. 31, 1978

Certified:

*Herbert A. Underwood*  
Herbert A. Underwood  
Reg. Land Surveyor,  
Ind. Reg. #11067



G-28

C E R T I F I C A T E   O F   S U R V E Y

I, Herbert A. Underwood, hereby certify that I am a Registered Land Surveyor, licensed in compliance with the laws of the State of Indiana: that the following description and accompanying plat correctly represent a survey completed by me. That all monuments shown thereon actually exist: and that their location and type are accurate to the best of my knowledge and belief.

LEGAL DESCRIPTION: 1 tract of land in the Fractional northeast quarter of Section 6, T 29N, R7E, Wabash County, in the Town of North Manchester, Indiana.

More particularly described as follows:

Beginning at a point in the west right of way line of Wabash Road, said point being South 9°-35' West 336.69 feet of the intersection of the west right of way of Wabash Road and the south right of way of West Main Street in the Town of North Manchester; thence continuing S 9°-35' W 291.24 feet along said Wabash Road right of way; thence N 80°-30' W 1181.0 feet; thence N 2°-39' W 134.9 feet to the southwest corner of Heeter's Addn; thence N 8°-52' E 731.6 feet along the south boundary of said Heeter's Addn.; thence S 1° W 78.3 feet; thence N 89°-E 489.93 feet to the point of beginning. Containing therein 6.13 acres more or less.

Subject to easements and grants for substation of the Public Service Company of Indiana, Inc. in the northeasterly corner of above described property.

Surveyed for:  
North Manchester Foundry  
Division of M.H. Detrick Co.  
North Manchester, Ind.  
Aug. 12, 1976



Certified:

*Herbert A. Underwood*

Herbert A. Underwood,  
Reg. Land Surveyor,  
Ind. Reg. #11067

G-2B

TO

George Oliver

FROM

SUBJECT

North Andover Foundry

MESSAGE

This waste is not hazardous in my opinion. It is dumped on site. Seems to be a good candidate for site exclusion. Cores are a very small portion of their waste.

SIGNED

*David W. [Signature]*

DATE 12/19/83

REPLY

FOLLOW-UP  
DATE

REMOVE PART 2, AND FORWARD PARTS 1 AND 3. PART 2 WILL BE RETURNED WITH REPLY.

RECEIVED

STATE BOARD OF HEALTH

INDIANAPOLIS

6-20

OFFICE MEMORANDUM

DATE: August 16, 1979

TO: Files

THRU: Dan Magoun

FROM: David M. Brown

SUBJECT: Correspondence With Mr. Clarence Auler  
R.R. 1, State Road 13  
North Manchester, IN 46962

On approximately August 1, 1979, Mr. David Brown of this office had a telephone conversation with Mr. Clarence Auler of North Manchester, Indiana, concerning an open dump being operated by Mr. Auler on the rear portion of his property.

Mr. Brown confirmed that Mr. Auler's address was correct and that delivery of the certified letter to Mr. Auler notifying him of the open dump violation had been circumvented by Mr. Auler.

Mr. Brown told Mr. Auler that all of the refuse deposited on his property must be either (1) hauled to an approved sanitary landfill or (2) covered with at least two feet of compacted soil. Mr. Brown stated that this open dump violation must be corrected by September 1, 1979, and that a reinspection of the site would be made on or about that date.

Mr. Auler, who is also a local trash hauler, was belligerent throughout the conversation and did not state whether or not he would correct the violation.

DLBrown/lb

# STATE OF INDIANA



G-28  
INDIANAPOLIS

STATE BOARD OF HEALTH  
AN EQUAL OPPORTUNITY EMPLOYER

Address Reply to:  
Indiana State Board of Health  
1330 West Michigan Street  
P. O. Box 1964  
Indianapolis, IN 46206

Mr. Walt Linn  
North Manchester Foundry  
205 Wabash Road  
P.O. Box 345  
North Manchester, IN 46962

APR 2 1984

Dear Mr. Linn:

Re: Exclusion Site Application

This letter is in response to your Exclusion Site application of January 11, 1984.

After reviewing the chemical composition of your waste streams and the geologic setting of your proposed exclusion site it has been recommended by technical staff that the exclusion site on North Manchester's Foundry property be denied. With phenol levels more than 1,000 times the drinking water standard it is further recommended by staff that a site of more suitable geology and greater ability to attenuate movement of any contaminants be considered.

If you have any questions concerning this matter, please contact Mr. Roy Harbert of this office at 317/633-0194.

Very truly yours,

*George Oliver*

George Oliver, Chief  
Special Projects Section  
Solid Waste Management Branch  
Land Pollution Control Division

REH

cc: Wabash County Health Department  
Mr. David Brown, ISBH Field Representative